



INTEGRATED USE of all University athletic facilities by men and women will be possible when the future athletic complex has been completed. In the mid-central portion of the photo-drawing above can be seen the addition to the Benson Building, the latter now used chiefly for women's athletics. The addition, when built, will make integration a reality. (The structure will not be solely

for men, as previously reported in the Bulletin.) All that's holding up construction is city permission to exceed the 45 foot limit on the height of buildings. Spadina Ave., which the addition will face, is the broad thoroughfare angling upward from the bottom on the left side of the picture. Just below the athletic complex is curved New College; upper right, Roberts Library.

Protest limit on full courses

Students enrolled in the six-week summer day program at the University of Toronto will not be permitted to take two full courses next summer as a result of a new regulation effective in the summer of 1975. The regulation stipulates that students may take no more than 1½ courses within any six-week period unless they are taking the work at a foreign university.

James E. Cruise, Associate Dean of Arts and Science, said that the regulation was made "in the interests of maintaining academic standards" but part-time students complain that the decision discriminates against them.

In a petition to the Dean on July 3, this group contends that mature students are capable of determining for themselves whether they can carry two courses during the six-week session.

Norma Grindal, president of the Association of Part-time Undergraduate Students, intends to fight the decision because "we think the departments themselves should decide what courses can be taught in the summer." She agreed that the reading load of some courses is much too heavy to be handled in summer school but "individual departments already take the responsibility for any course which is too heavy and they usually decide not to offer it. The decision regarding those courses which are offered should be up to the students and not thrust upon them," she commented.

Honour Japan's Prime Minister Sept 25

A special Convocation is being held on Wednesday, Sept. 25, at 11:45 a.m. to confer the degree of Doctor of Laws *honoris causa* on Prime Minister Kakuei Tanaka of Japan.

Admission will be by ticket only. Tickets for staff and students may be picked up in the rotunda of Simcoe Hall between 9:30 a.m. and 4:30 p.m. on Monday, Tuesday and Wednesday, Sept. 16, 17 and 18.

Because of the limitations of space, tickets have to be limited to one per person, and a receipt must be signed to obtain a ticket.

"The new regulation will be particularly detrimental to out-of-town teachers," Mrs. Grindal contended, "because it will extend the period in which to complete their degrees."

In reply to the petition, Dean Cruise stated that "because instructors were aware of the heavy load being assumed the course requirements were being seriously weakened compared to those in the winter session. A two course load in a six-week period is equivalent in intensity to at least eight courses in the winter session," he said. However, he said students "will be free to petition for a special dispensation against this rule."

Mrs. Grindal said the matter would be brought to the attention of part-time winter students and the Council of the Faculty of Arts and Science which made the decision last December when many of those affected were not around to register their dissatisfaction.

Monday opening for nominations in GC by-election

As no nominations were received from Graduate Student Constituency II in last spring's general election of student and staff members, the Governing Council has authorized the holding of a delayed election to fill the seat held by James K. Martin in the 1973-74 year.

Mr. Martin agreed to continue to represent the constituency, which represents Divisions III and IV in the School of Graduate Studies and in the Graduate Department of Educational Theory, until his successor has been elected.

Nominations will open on Monday, Sept. 13, and remain open until 12 noon Sept. 27. Nominations must be sponsored by 15 nominators who must be members of the same constituency as the nominee. Anyone nominated must be a Canadian citizen at the time of nomination and documentary evidence, such as Canadian birth certificate or citizenship or naturalization certificate, must be submitted with each nomination form. If acceptable documents are not available, a notarized statement that the nominee is a Canadian citizen may be offered.

Voting in the delayed election will be conducted by mail ballot, which will be put in the mail to voters on or about Oct. 4. The election will close at 12 noon Oct. 22 and the result will be announced shortly thereafter.

Lunar crater named in memory of Banting

A lunar crater once known as Linne E is now officially recognized as Crater Banting by the International Astronomers' Union, a group in charge of naming lunar features. The crater is named for Sir Frederick Banting, co-discoverer of insulin with Dr. Charles Best, in University of Toronto laboratories in 1921.

Lunar features are named after persons recognized for their scientific achievement and merit, and who are deceased. The only exceptions to this latter stipulation have been American astronauts and Soviet cosmonauts; and Charles Abbot, a famous solar photographer, now dead, who was over 100 at the time of the committee's decision.

Only a few biological scientists have had lunar features named after them, among them Sigmund Freud and Thomas Huxley. The lion's share of lunar features bear the names of those involved with the physical sciences.

Engineering Hall of Fame proposed for Sesquicentennial

Dean Bernard Etkin and the Alumni Council of the Faculty of Applied Science and Engineering have endorsed with enthusiasm a suggestion that a Hall of Fame dedicated to the works and memory of distinguished graduates of the Faculty be included in the contemplated development of the foyer and quadrangle of the Galbraith Building. Such a development is one of the Faculty proposals for the University's sesquicentennial celebration in 1977.

A committee has been formed to explore generally the concept of a Hall of Fame, to recommend criteria and procedures for selection of the alumni to be

included in it, to recommend the physical arrangements and design of the Hall, to prepare cost estimates, and to report to the Dean and the Alumni Council by Oct. 10 this year.

The recommendations will then be considered by the Faculty Council and its executive and by the Council of the Engineering Alumni Association. Further action will depend upon the outcome of these considerations.

Prof. Howard Rayson is chairman of the committee. The other members are Prof. W. Douglas Baines and three alumni — G.R.F. Gross, D.M. Hector and A.R. Murdison.

Ph.D. Orals

Tuesday, September 17

T. Lytle, Department of Drama, "More Dissemblers Besides Woman: A Critical Edition". Thesis supervisor: Prof. R.B. Parker. Room 108, 16 Hart House Circle. 10 a.m.

Friday, September 20

I.L. MacDonald, Department of Educational Theory, "Planning for Implementation: Variables of Implementation and Participant Reactions". Thesis supervisor: Prof. E.H. Humphreys. Round Room, Massey College. 2 p.m.

R. Skeldon, Department of Geography, "Migration in Peasant Societies - The Example of Curzo, Peru". Thesis supervisor: Prof. J. Galloway. Round Room, Massey College. 10 a.m.

P.F. Wilkinson, Department of Geography, "Public Participation and Environmental Management". Thesis supervisor: Prof. J.B.R. Whitney. Room 107, 16 Hart House Circle. 2 p.m.

Friday, September 27

H.C. Karmaker, Department of Electrical Engineering, "A New Approach to the Soln of 3-D Magnetic Field Problems". Thesis supervisor: Prof. S.D.T. Robertson. Room 108, 16 Hart House Circle. 2 p.m.

Monday, September 30

J. Bernstein, Department of Pharmacology, "The Role of the Sodium Pump in the Regulation of Liver Metabolism in Experimental Alcoholism". Thesis supervisor: Dr. Y. Israel. Room 108, 16 Hart House Circle. 10 a.m.

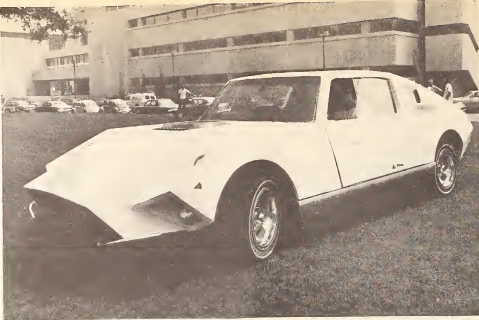
Scanner and computer are adapted to revise Buddhist concordance

It took 40 years to compile a concordance or index of all the words in the Pali Tipitakam, the Buddhist scriptures, but with the aid of computers the work on a second edition may be completed within two years. This is the expectation of A.K. Warder, chairman of the Department of Sanskrit and Indian Studies, who is coordinating the work on this project. Although scholars in the humanities may be apprehensive about the advent of computer science into their field, it is likely that "computers will play a much greater role in the future," said Prof. Warder.

While a concordance for the Christian Bible, well-known to scholars as the Crusades Concordance, was published in 1737, after being in preparation for 100 years, the Pali texts (Pali refers to the language used in India at the time of the Buddha) were not even in printed form until the turn of the century, according to Prof. Warder. In 1880 the Pali Texts Society was established in London, England, with the purpose of publishing these scriptures as an aid to scholars in their study of the religious philosophy, and culture of Buddhist society. The Pali Tipitakam is more than three million words in length, four times longer than the Bible.

A catalogue of all the words in the scriptures was first published in 1922 after 40 years of work, done entirely by hand. Soon after its release the edition was found to be incomplete. "There were some deliberate omissions and some mistaken omissions but the most serious omission related to compounds. The people preparing the words appear will also enable scholars to decide whether the Pali texts are solely the work of Buddha. Contemporary followers of Buddhism contend that the Pali texts do represent the actual words of Buddha, but modern scholars are not convinced, as certain words seem to be in common usage in some parts but not in others.

When the Canada Council suggested that a computer be used in compiling the concordance, "my first reaction was negative," said Prof. Warder. "It seemed to me that the knowledge of a scholar was needed."



Miss Purity 1 finds new home with National Research Council

Miss Purity 1, co-winner in 1970 of a 3,600-mile clean air race from Boston to Pasadena, has been sold by U of T to the National Research Council in Ottawa for one dollar. Miss Purity 1 topped a field of 42 experimental vehicles entered by North American universities and colleges. A propane-electric hybrid, the car is able to run on either electric power from ten storage batteries or its propane gas engine or on various combinations of both. The engine laboratory of the NRC has expressed interest in hybrid vehicles for fuel conservation purposes.

Tests conducted in 1970 by the Ontario Department of Energy and Resources showed that unburned hydro-

carbon levels from Miss Purity's exhaust were down to one-half the level stipulated in the 1975 standards of the State of California. Carbon monoxide levels were less than one-fortieth of those specified in the same regulations. The U of T has used the vehicle primarily for research on automotive pollution control.

According to Dr. Frank Hooper, Department of Mechanical Engineering, Miss Purity 1 has travelled about 25,000 miles and is capable of attaining speeds of 100 m.p.h. The car can travel about 210 miles with its stored propane gas and nearly ten miles on electrical power. Propane gas is no more dangerous than conventional gas, according to Dr. Hooper.

Recently, Miss Purity 1 has taken a back seat to its all-electric sister, Miss Purity 2, an experimental urban vehicle. "It's a delight to see her find a second juice," says Dr. Hooper, "and that the flexibility of the system makes it useful in other fields as well."

Students do very well taught by computer

Computers are apparently excellent teachers.

Dr. F.G. Smith of the Department of Geology, who has been working with computer teaching methods, compared last year's performance of eight computer-taught students with 34 of those taught by traditional methods. The students were all enrolled in an introductory geology course, GLG 100.

The eight computer-taught students did not attend any lectures on the physical and historical texts they were assigned. Yet they finished the course with an average computer assigned mark of 94.1 per cent.

Thirty-four other students, who attended the traditional lectures and tutorials, earned an average final mark of 67.4 per cent, based on the same material. The students responded to more than 1,200 test questions over the year.

Although the computer-interactive students were selected on the basis of I.Q. to minimize any damage in the event that the method proved to be a failure, their lab marks were not substantially higher than those who attended the traditional class.

The computer-interactive students earned an average mark of 76.0 per cent for lab assignments and tests. The other group had an average mark of 74.1 per cent. Smith said that the results showed that Dr. Smith, was taught by traditional methods.

This fall a larger fraction of the class will be selected randomly for a statistical test of whether the computer teaching method is better than the traditional one.

Dr. Smith cited some factors to explain the performance of computer-taught students. They had access to the computer from 8:30 a.m. to 4 a.m. seven days of the week. They could, therefore, define their own "class" hours. The students could also spend as many hours with the computer as they wished. Under the traditional teaching method there are only about 50 contact hours with the instructors at specified times.

In memoriam Dr G H W Lucas

Dr. George Herbert William Lucas, professor emeritus of pharmacology, died on June 25, two months before he would have celebrated his 80th birthday.

Dr. Lucas, born in Parkhill, Ont. on Aug. 25, 1894 attended the University of Toronto as a student in honour science, and received his Ph.D. degree in physical chemistry in 1923 while a lecturer in chemical engineering. In 1924-26, he was closely associated with the late Sir Frederick Banting. He joined the Department of Pharmacology as an assistant professor in 1926, and was professor of pharmacology from 1945 to 1965. He retired from full-time service in 1963 but continued teaching on a part-time basis until 1965 when he became professor emeritus.

Dr. Lucas achieved international recognition for the discovery of cyclopropane in 1928. Dr. Lucas, serving as the biochemist in pharmacology, encountered cyclopropane as a chemical oxidant, proposed its pharmacological investigations, and then found with Dr. V. E. Henderson, a specialist in anaesthetics, its ability to smoothly anesthetize animals. Sir Frederick Banting was one of the first human volunteers to submit to anaesthesia with this new agent. For many years, cyclopropane was a most widely used general anaesthetic throughout the world.

Dr. Lucas initiated, or took prominent part in, many research projects, particularly in toxicology. His studies concerning alcohol and road traffic set an important pattern. He was pre-eminent as a medical expert in cases involving poisoning and firearms. As a teacher of pharmacology and toxicology, Dr. Lucas was author and joint author, or joint editor, of numerous publications, including "Symptoms and Treatment of Acute Poisoning" (1952).

Because of Dr. Lucas' interest in sports as well as toxicology, he undertook in 1934, at the request of the Ontario Jockey Club, the task of detecting drugs in race horses. He then served for many years as analyst for racing commissions in Ontario, Quebec and Manitoba and became president of the international Association of Official Racing Chemists.

Dr. Lucas was past president of the Canadian Chemical Association, the Pharmacological Society of Canada, the Toronto Biochemical and Biophysical Society, the Royal Canadian Institute, the Toronto branch of the Association of Analytical Chemists of Canada, the Academy of Medicine Camera Club, and the Ontario Arms Collectors' Association. He was captain of the University of Toronto Rifle Association from 1925-69. The Hart House Revolver Club and the Hart House Archery Club were founded by Dr. Lucas. Dr. Lucas was a member of fourteen scientific societies in Canada and the United States.

In his unassuming manner, Dr. Lucas helped and supported many students and he gained numerous lasting friendships. Because of his humour, he was an oft-sought after dinner speaker. Dr. Lucas leaves his wife Peg (nee Mary Woolner), his companion and outstanding support for more than fifty years; a son and a daughter, and four grandchildren.

Exhibitions

"Fifteen Years of Woodcuts" by Naoko Matsubara. Hart House Art Gallery. Sept. 11-27. 11-5 daily; 2-5 Sunday; 11-1 Monday.

"Baxters Prints; a selection from the Starr Collection". E.J. Pratt Library, Victoria University. To Oct. 31.

"The Exhibition of Archaeological Finds of the People's Republic of China". Royal Ontario Museum. To Nov. 16. Monday to Saturday: 10-6; Sunday: 12 noon to 10; also "Faces of Old China" and "Visions of Cathay".

"Starfolk" - Theatre of the Stars Show. Tuesday to Friday: 3, 8 p.m.; Saturday: 2, 3, 30, 7, 9, 30 p.m.; Sunday: 2, 3, 30, 5, 7, 30 p.m.

"Artist and Universe" - surrealist scientific art by Jon Lomberg. Third floor, McLaughlin Planetarium.

"Canadian Watercolours and Drawings" (1757-1930). Signum Samuel Canadian Gallery. Oct. 1-Jan. 1.

Thoughts of the sea inspire Glass works

Lithuanian-born sculptor Harald Glass will have his first Toronto exhibit at the U of T from Sept. 12 to 27. Mr. Glass works in fibre-glass and stone with a welder's torch. Many of his works, says, are motivated by thoughts of the sea.

Mr. Glass lived in East and West Germany and Poland before coming to North America. He studied literature and sculpture at the University of Wisconsin in Madison from 1960-1966. Now he's an assistant professor in the Department of Fine Art at U of T where he teaches sculpture.

The gallery of the Faculty of Architecture, Urban and Regional Planning and Landscape Architecture, 230 College Street, will act as host for Glass' show. The exhibit will be open weekdays from 9 a.m. to 6 p.m.

Research Administration

National Research Council applications

New applications and booklets will be distributed by the Office of Research Administration to all departments holding N.R.C. awards shortly after Sept. 10. One original and three copies of applications are now required, and should reach O.R.A. by Oct. 4, N.R.C. New applicants must now meet this deadline.

Equipment grants now need a priority listing (for N.R.C.) from the chairman which gives the Council the departmental equipment needs, priorities and justifications.

Graduate student and postdoctoral pay rates will be \$355 per month and \$800 per month respectively, effective April 1, 1975.

Medical Research Council applications

The Council has reviewed its grant conditions. Changes include new rates for research assistants. Information will be distributed as soon as it is received by O.R.A. (Faculty of Medicine researchers should obtain copies from the divisional research office.)

Canadian Arthritis and Rheumatism Society

O.R.A. has received a few copies of new grant conditions. New application forms are now available. Further information will be made available as soon as O.R.A. has it.

Connaught Fund use to be changed

At its September meeting, the Connaught committee approved revised terms of reference which incorporated much of the draft purpose for the fund circulated for comments by Dr. G.E. Connell, Vice-President Research and Planning. O.R.A. will be responsible for administering the applications and awards and is to propose conditions and application forms to the committee.

M Eng (Elec) courses at night

The Department of Electrical Engineering will continue its program of evening courses leading to a Master of Engineering degree. The program is professionally oriented, specifically designed to meet the needs of practicing engineers, and normally requires the satisfactory completion of eight half-year courses and an engineering project.

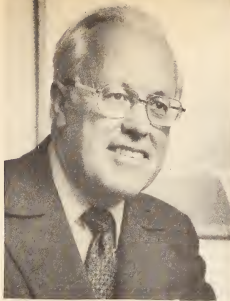
This fall a total of 16 courses will be given one evening a week from 7 to 9 p.m. The fields of interest covered are: communications, computers, control systems, power devices and systems, solid state devices, circuits and instrumentation, and wave sciences. It is usually possible to arrange a program that will permit continuous employment with minimum disruption and still allow completion of the work within the required five years.

Qualified applicants may also be enrolled as non-degree special students to take individual courses.

Medicine seeks head for Community health

A search is under way for an associate dean, Community Health, Faculty of Medicine. A Presidential Committee has been created composed of the following professors: D.W. Lewis, P. Jones, H. Dreyer, D. Hewitt, C.H. Hollenberg, E.M. Sellers, Jr., C.W. Schwenger, and S.S. Lee of McGill University, external consultant.

The committee would welcome any suggestions for possible candidates. Such suggestions should be submitted to the chairman, Dean R.B. Holmes, Faculty of Medicine, Dean's Office, at the earliest opportunity as the committee wishes to proceed with its deliberations.



H O Barrett appointed Dean

Prof. H.O. Barrett has been appointed Dean of the Faculty of Education, effective July 1, 1974 to June 30, 1975. He formerly held the position of Acting Dean.

Harry Barrett was born in Brantford, Ont. went to school in Toronto, and received his degrees from the U of T. He worked as a teacher in local schools before serving with the Canadian Army, from which he retired with the rank of major.

After the war, Prof. Barrett resumed teaching and later became head of guidance at North Toronto Collegiate Institute. He joined the Ontario College of Education (now the Faculty of Education) in 1962 as chairman of educational psychology. Four years later he was appointed Assistant Dean and, in 1973, Acting Dean.

Prof. Barrett is the author of many publications in education and counselling, and, for the past 13 years has organized the annual conference of the Ontario Education Research Council, a meeting which attracts several hundred delegates.

Following their father's lead, Prof. Barrett's son and daughter are both studying at the U of T, and a second son is completing a Ph.D. at the London School of Economics.

Violin sonata will have premiere at Frank concert

The Summer School of the Royal Conservatory of Music in co-operation with the Faculty of Music presents violinist Philip Frank, in his Toronto debut recital on Thursday, Sept. 19 in Walter Hall, Edward Johnson Building at 8:30 p.m.

Included in the program will be "Variations on a Japanese Theme" by Efreim Zimbalist, Sr., and the world concert premiere of the Sonata by Efreim Zimbalist, Jr. for violin and piano. Assisting Mr. Frank will be Ruth Morawetz, pianist, and William Kuinka, guitarist.

It is not often that contemporary fathers and sons are represented on the same program. The unusual feature of this evening is that both father and son have made their marks not as composers. The father is best known as a violin virtuoso and the son as a popular film and television actor. The father has been associated with the Curtis Institute of Music as teacher and director; the son studied at the same institute, majoring in composition.

Mr. Frank was a member of the original N.B.C. Symphony Orchestra under the baton of Arturo Toscanini. He recently moved to Toronto to follow a business career. In his student days, Mr. Frank studied with Leopold Auer and Mr. Zimbalist Sr. and was a close friend of the Zimbalist family. Mr. Zimbalist, Jr. will be in the audience for this performance.

Tickets are required for admission and they are available free of charge at the Royal Conservatory of Music, Publicity Office - 928-3771.

COMING EVENTS

Wednesday, 18 September

MUSIC - Classical Indian Music performed by artists from South India. Walter Hall, Edward Johnson Building. 8.15 p.m. Tickets \$4; call 928-7256 (Music and Sanskrit and Indian Studies). Also on Friday, Sept. 20

Thursday, 19 September

MUSIC - Recital by Philip Frank, violinist, assisted by Ruth Morawetz, pianist, and William Kuinka, guitarist. Walter Hall, Edward Johnson Building. 8.30 p.m. Tickets (free) are required; phone 928-3771 (Summer School of Royal Conservatory of Music and Faculty of Music)

MUSIC - A Sightseeing Assembly with Prof. Charles Heffernan; audience participation in sightseeing of a major work for chorus and instruments. Walter Hall, Edward Johnson Building. 2.10 p.m. No tickets, no charge (Music)

Friday, 20 September

SUPPER - Reception 5.30 p.m. buffet 6.30-8.30 p.m. (Faculty Club)

Wednesday, 25 September

LECTURE: Science and Technology - "Science and Technology Policy in Developing Countries: the role of the International Development Research Centre". Prof. C.H.G. Oldham, Science Policy Research Unit, University of Sussex International Development Research Centre, Ottawa. Lecture Theatre, 140 St. George St. 8 p.m. (Varsity Fund, Political Economy, IHPSST)

COLLOQUIUM: Science and Technology - "Science Policy Studies at Sussex". 597 Sidney Smith Hall. 4 p.m. (Varsity Fund, Political Economy, IHPSST)

Thursday, 3 October

FILMS - Historical Sound Films from the 1930's of internationally known artists. Walter Hall, Edward Johnson Building. 2.10 p.m. No tickets, no charge (Music)

Sunday, 6 October

MUSIC - Orford String Quartet. Walter Hall, Edward Johnson Building. 3 p.m. Tickets \$4, students \$2 with L.D. Cheques payable "Special Concerts", enclose stamped addressed envelope (Music)

Wednesday, 9 October

LECTURE: Archaeology - "Mycenaean and Phoenicians in Cyprus". Dr. Vassos Karageorghis, Director, Department of Antiquities of Cyprus. Lecture Room, Planetarium. 8.30 p.m. Free

New publications from the Press

Books published during July and August:

Edward W. Erickson and Leonard Waverman (eds.): *The Energy Question, Volume 1: The World*, 400 pages, \$17.50 cloth, \$6.50 paper. *Volume 2: North America*, 392 pages, \$17.50 cloth, \$6.50 paper.

Philip Ouston: *The Imagination of Maurice Barres*, 310 pages, \$16.50.

Larry S. Bourne, Ross D. MacKinnon, Jay Siegel and James W. Simmons (eds.): *Urban Futures for Central Canada: perspectives on forecasting urban growth and form*, 368 pages, \$15. cloth, \$7.50 paper.

Walter Goffart: *Caput and Colonate: towards a history of late Roman taxation*, 166 pages, \$10.

Eleanor Cook: *Browning's Lyrics: an exploration*, 318 pages, \$15.

Arthur Herbert Richardson (edited by A.S.L. Barnes): *Conservation by the People: the history of the conservation movement in Ontario to 1970*, 154 pages, maps and photos, \$8.50.

D. Laidler and D. Purdy (eds.): *Inflation and Labour Markets*, 258 pages, \$15.

W.K. Keith: "The Rural Tradition: a study of the non-fiction prose of the

English countryside, 312 pages, \$15.

The Canadian Historical Review Index, Volumes XXX-LI, 1950-70, 210 pages, \$25.

Eric Arthur: "Toronto, No Mean City, 2nd edition, 280 pages, 396 illus., \$25.

The Collected Works of Erasmus (new series):

The Correspondence of Erasmus, Volume 1: letters 1 to 141 (1484 to 1500), translated by R.A.B. Mynors and D.F.S. Thomson, annotated by Wallace K. Ferguson, 372 pages, 13 illus., \$25.

Thomas S. Ahler, Douglas E. Sanders, and Sally M. Weaver: *A Canadian Indian Bibliography, 1960-1970*, 732 pages, 2 maps, \$35.

James Creighton: *Discoepaedia of the Violin 1889-1971*, 998 pages, \$125.

Louis Tivy (ed.): *Your Loving Anna: letters from the Ontario frontier*, 120 pages, \$2.95 (first paper edition).

NEW IN PAPERBACK:

G.P. de T. Glazebrook: *The Story of Toronto*, \$4.95.

Loris S. Russell: *A Heritage of Light*, \$7.50.

Accommodation for rent and sale

Furnished two-bedroom garden maisonette; fully equipped; electric central heating; garage. In Horsaam, Sussex, U.K.; 40 miles from downtown London and 20 miles from University of Sussex, Brighton. One or two years lease; security deposit and references required. Call 445-6493 for details.

For rent, attractively furnished and carpeted two-bedroom apartment in quiet triplex. Residential street in Port Credit, short walk from lakefront, minutes from GO train and Erindale. Parking and laundry. Available November, 1974, to April, 1975. Staff or married students preferred. \$250 monthly. 278-2504 or 274-8141.

Renovated Annex House, 9 rooms, 3 1/2 baths, 2 separate garages. In excellent

condition. 25-foot living room with brick fireplace. Large master bedroom with full walk-in closet, sundeck. Study with built-in bookcases. Asking \$135,000; will take back substantial mortgage. Available late December. Prof. S.A. Lakoff, 87 Walmer Road, 921-2452.

To sublet, furnished apartment; two bedrooms, living room, kitchen, bath, parking space. \$315 plus utilities. Available from Sept. 15, 1974, to Sept. 1, 1975 (Professor going on sabbatical). Phone 485-1374, 928-5002 or 483-3776.

At Moore Park, partly furnished four-bedroom house to rent for six months to a year. Has fireplace, large dining room, modern kitchen with dishwasher, two bathrooms, beautiful garden and garage with private driveway. Call 483-3620.

Canada, France and Hawaii co-operate to build giant telescope

Astronomers at the University of Toronto will have access to one of the world's finest telescopes now being built on the peak of Mount Mauna Kea, the highest Hawaiian mountain at nearly 14,000 ft.

The construction of the 144-inch reflecting telescope is a co-operative effort involving Canada, France and Hawaii and is to cost \$25 million. The University of Hawaii is providing the site, the road leading to it and the living quarters, while Canada and France are splitting the remaining 85 per cent of the construction costs and responsibilities.

The telescope will be among the best three in the world, said Dr. Donald MacRae, head of the U of T Department of Astronomy and one of the eight member board of directors on the Canada-France-Hawaii-Telescope Corporation, which is supervising the construction.

The CFH telescope will be almost twice as big as the largest in Canada, the 76-inch reflecting telescope at the David Dunlap Observatory in Richmond Hill. "A telescope's size," Dr. MacRae explained, "is determined by the diameter of the mirror. It collects the light from stellar objects and brings it to a focus, so the more light collected the greater the distance one can see."

Mount Mauna Kea is one of the best observatory sites in the world, since it is above most of the cloud cover. "You can be assured that six of ten nights will be clear," said Dr. MacRae.

The telescope will also be able to see through the atmosphere and therefore will be much more efficient in getting sharper and steadier images. And since there is little water vapour to absorb infra-red rays better infra-red transparencies will be obtained. That means observations that couldn't be made at sea level will be possible on Mauna Kea.

"The infra-red spectrum shows great promise for astronomers," said Dr. MacRae, "and is only now being explored. The comet Kohoutek, for example, had a very bright infra-red nucleus because of the hot dust particles in the comet and their chemical nature."

Dr. MacRae said that many of the interests and fields of expertise at the Dunlap Observatory will be pursued further with the new telescope. "This would include studies of external galaxies and our own galaxy, which will be more accessible than with the telescope at the

Dunlap Observatory. We will also study variable stars, ones which undergo changes in intensity. This has been a mainstay of our research. We will also do radial velocity work, a field in which the Dunlap Observatory has developed special abilities. This involves studying the speed or motion of stars, either towards or away from the observer."

The telescope is to be computer controlled to facilitate quick accurate pointing and to allow stars for the duration of a spectrum exposure. A spectrum is obtained when light passes through a prism or similar device and separates the star light into its component colours. Information about the star's temperature, speed of movement and its chemical components, can be revealed by a spectrum exposure.

Other computers will be built to handle information from various instruments attached to the telescope. They will analyze star light, getting the most out of low light levels of distant objects.

"Canada has very good expertise in computer theory and practice and the government is trying to capitalize on this," Dr. MacRae said. "It is in the hope of stimulating more of this, that the government wanted most of the computer work assigned to Canada as a responsibility."

Canada is also constructing the dome and is grinding and polishing the 15-ton mirror at the Dominion Astrophysical Observatory in Victoria, British Columbia. The mirror will be polished to an accuracy of one-millionth of an inch and will take three years to complete. The French are building the mechanical parts of the telescope and are also involved in the computer and instrumentation work.

Transport study: gov't gives aid

The Ministry of Transport will extend its support of university transport study Centres until April 1977 under an extension of grants originally administered by the Canadian Transport Commission and now by the Transportation Development Agency. 1.7 million dollars will be used to fund the Centres for Transportation Studies at the University of British Columbia and the University of Manitoba, the Centre de recherche sur les transports at the Université de Montréal as well as the University of Toronto-York University Joint Program in Transportation.

This funding will be administered by the Transportation Development Agency in two components. In order to maintain the flow of well prepared students, the academic aspects of the Centres' activities will be supported without imposing any external control. The *Centre Support Grant* is intended to be used to support the Centre, its library or documentation services, seminars and research assistantships, as well as a certain base level of research activity. The level of this grant will be approximately 60 per cent of last year's support for the entire Centre program.

Major research projects will be supported by *Negotiated Research Contributions*. Evaluation criteria which will be used by the Transportation Development Agency to determine this aspect of the funding are: the potential contribution to the Agency program objectives; the quality of the proposal and its feasibility; value of the research results in social, economic and scientific terms, regionally, nationally and internationally; the type of organization best suited to conduct the activity; the qualifications of the TDA staff to serve as liaison officers; the avoidance of undue duplication; the training potential of the activity. For large interdisciplinary programs, criteria will include the institutional arrangements and management capabilities of the recipient organization with respect to its ability to meet the commitments under the terms of the agreements.

STAFF NOTES

Arts and Science

PROF. K. YATES gave invited lectures during April at Ecole Normale Supérieure de Chimie Physique, Paris entitled "L'Intervention des cations vinyliques lors des réactions d'addition et de solvolyses"; at Université Paul Sabatier, Toulouse, France, on "La mesure et le comportement des fonctions d'acidité"; and "L'Application des fonctions d'acidité aux réactions catalysées par des acides forts"; at Istituto di Chimica Organica dell'Università, Padova, Italy, on "A New Approach to the Study of Acid-Catalysed Reactions." Prof. Yates also gave a paper at the IUPAC Conference on Physical Organic Chemistry, Amsterdam, Holland, on "The Solvolysis of Arylvinyl Tosylates and Bromides"; and was co-author of a paper entitled "A Theoretical Study of Electrophilic Addition to Carbon-Carbon Double and Triple Bonds."

PROF. C. C. GOTTSCHALK participated in a panel on "Humanization of Information Systems" at the 1974 National Computer Conference in Chicago and made a presentation on "Key Problems in Humanizing Information Systems: Stanley House Report" on May 8.

PROF. D. MARIN read a paper on "La naturalité en la poesia social" at the meeting of the Canadian Association of Hispanists (Learned Societies) in Toronto, May 28. He was elected vice-president of the Association.

PROF. E. VON RICHTHOFEN gave the Annual Dante Lecture of the Dante Society of America on May 17 at Harvard University. The topic was "Traces of Servius in Dante."

PROF. PAUL FOX has been appointed by the Board of Directors of the Canadian Political Science Association to be a co-editor of the *Canadian Journal of Political Science/Revue canadienne de science politique*. PROF. F.W. PEERS has been appointed assistant editor of the same journal.

PROF. J.L. MASSON presented a paper at the annual meeting in Denver, May 3, of the American Psychoanalytic Association entitled "Schreber and Freud." There was a prepared response by Drs. W. Niederland and M. Katon.

PROF. R. MORTON SMITH gave a lecture on "The Background of Buddhism" at the Tongguk Buddhist University, Seoul, Korea, on May 21. He also visited Buddhist and archaeological sites in Korea with the assistance of the Korean Overseas Information Service. Prof. Smith completed his three-year term on the executive committee of the Conference for Scottish Studies at the meeting of the Learned Societies in June.

University College

PROF. V.E. GRAHAM attended the Colloque Marguerite de Savoie which was held in Ancey, Chambéry and Turin from April 29 to May 4. He was chairman of the first session and later gave a paper on "Gabriel Symeon et le rêve impérial des rois de France."

Medicine

DR. MICHAEL M. LENZNER delivered on May 2, an address on "Man and his Environment: A Regard to Tropical Medicine in the Middle East" to the 14th Annual Canadian Forces Medical Services Conference at the Defence and Civil Institute of Environmental Medicine.

PROF. N.S. RANADIVE delivered a paper on "Biochemical Mechanisms in the Release of Histamine from Mast Cells" on May 15 at the University of Guelph and was MRC-visiting professor for two days at the University of Manitoba early in May.

BULLETIN DEADLINE

The University of Toronto Bulletin is published on an ad hoc basis, generally once a week on Fridays. Copy should be typewritten and double-spaced. The deadline for publication is seven days before publication.

Hygiene

DR. ROY SHEPHARD attended the 21st Annual Meeting of the American College of Sports Medicine (Knoxville, May 9-11) and was appointed to the office of President-elect. He gave an invited lecture on the topic "Pulmonary Gas Exchange in Exercise" and a free paper entitled "Vitamin E and the recovery from Physical Activity." Dr. Shephard has recently been elected an honorary fellow of the Belgian and the British Societies of Sports Medicine.

Continuing Studies

PROF. CARLOS YORIO presented a paper on "Grammatical Complexity and the Teaching of Reading in an ESL Course" at the Eighth Annual Conference, March 5-10 of TESOL (Teachers of English to Speakers of Other Languages) at Denver, Prof. Yorio also addressed ESL Teachers of the University of North York on Feb. 15 on Professional Development Day, on the subject "Teaching the Structures of English - Why and How."

Forestry

PROF. A.S. MICHELL attended a meeting of the Logging Operations Group, Woodlands Section, Canadian Pulp and Paper Association, Montreal, May 14-15.

PROF. J.J. BALATINECZ and F.J. KEENAN attended the annual meeting of the Eastern Canadian Section of the Forest Products Research Society in Timmins and New Liskeard, Ont. on May 23 and 24. Prof. Balatinez was elected chairman, and Prof. Keenan vice-chairman of the Section. Prof. Keenan has been named chairman of the National Research Program Committee on Structural Utilization of the Department of the Environment, Ottawa. This committee is advisory to the Eastern and Western Forest Products Laboratories. Dr. Keenan participated in the Individualized Learning Management Workshop at the University of Guelph, May 13-15, sponsored by Shell Oil of Canada, the Committee of Ontario Deans of Engineering and the Joint Committee on Instructional Development of the COU/CAU.

Management Studies

PROF. J.E. DOOLEY attended the 5th Annual Research Forum at McMaster University, Apr. 17-18, in which he participated in a panel concerning "Innovative Teaching Procedures and Management Information Systems." On May 27-29, he attended the Canadian Operational Research Society Annual Conference in Ottawa and gave a paper entitled, "A Planning System to Minimize Environmental Impact Applied to Utility Route Selection."

PROF. M.G. EVANS presented a paper entitled, "A Re-evaluation of the Path-Goal Theory of Motivation" at the June meetings of the Canadian Association for Administrative Sciences.

PROF. M.J. GORDON presented a paper entitled "An Industrial Strategy for Canada" at the meeting of the Canadian Association for Administrative Sciences, June 2. Also on June 2, he presented, with PROF. PAUL HALPERN, another paper entitled "Capital Asset Pricing Under Inflation." On May 23, he presented a paper entitled, "Financing the Arctic Gas Pipeline" at the Delta Gas Conference of the Canadian Arctic Resources Committee.

PROF. D.A. ONDRACK attended meetings of the executive committee of the Canadian Association of Administrative Sciences, June 1-2, and was re-elected as vice-president of the association at the annual general meeting on June 3. He acted as local arrangements chairman for the C.A.A.S. annual conference which was held as part of the Learned Societies meetings at the U of T. On June 4, he was the recipient of a special award from the organizational behaviour division of the association for his work in helping to create that division at the time of the formation of the C.A.A.S.

Mountain in Rockies named after Prof Sharp

In 1972, Prof. William T. Sharp was killed by an avalanche while climbing in the Clemenceau Icefield region in the Rocky Mountains. He was a member of the Mathematics Department and an associate dean of the Faculty of Arts and Science.

With the approval of the Geographical Names Committee a mountain near the Icefield has now been named after him; cf. *Canadian Alpine Journal*, vol. 57 (1974), p. 86.

Faculty of Music studies win major scholarships

The following major awards have been made in the Faculty of Music: The Eaton Graduating Scholarship (\$2,000) to Kirk Loughton, french horn, who was judged the most promising graduate in the Bachelor of Music in Performance degree program; he has accepted the position of principal french horn with the Atlantic Symphony in Halifax;

The William Erving Fairclough Scholarship (\$1,200) to Dennis Patrick, composer, who graduated in the Bachelor of Music in Composition degree program; the scholarship is meant to enable an artist to study in the United States or Europe;

W.O. Forsyth Memorial Scholarship (\$13,000) awarded as follows: Philip Thurston, pianist (\$5,000); Robin Chow pianist (\$4,000); Constance Stewart, pianist (\$4,000).